

REMARKS/ARGUMENTS

The applicants respectfully appreciate the allowance of claims 29-37.

Reconsideration of the above-identified application in view of the present amendment is respectfully requested. By the present amendment, claim 4 has been cancelled. The present amendment reduces the number of claims and, thus, the number of issues on appeal.

Below is a discussion of the 35 U.S.C. § 103 rejections presented herein in the order that they are presented in the Office Action.

35 U.S.C. §103 rejection of claims 1, 3-8, 11, 12, 14, 15, 18-24, 27, and 28

Claims 1, 3-8, 11, 12, 14, 15, 18-24, 27, and 28 were rejected under 35 U.S.C. §103(a) as being obvious over Sawada et al. (Re. 36,898) in view of Reidy et al. (6,386,579).

Claim 1 recites a steering wheel comprising a rim portion, a spoke portion, and a foamed thermoplastic polyolefin elastomer padding material adhered to the rim portion and the spoke portion. The foamed thermoplastic polyolefin elastomer padding material including an inner portion and an outer portion substantially covering the rim portion and the spoke portion. The inner portion has cellular structure and a substantially uniform cell density. The outer portion has a continuous external surface free of interruption by a cell. The foamed thermoplastic polyolefin elastomer padding material comprising a gasified chemical foaming agent and a thermoplastic polyolefin elastomer. The thermoplastic polyolefin elastomer is weatherable and has a durometer shore A hardness of about 30 to about 90.

Claim 1 is patentable over Sawada et al. in view of Reidy et al. because (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

1. Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell.

Sawada et al. teach a cover for a vehicle air bag that comprises an injection molded core layer and an injection molded external surface layer. The injected molded external surface layer can be foamed up to 3 times its volume (Column 4, lines 22-24). Sawada et al. do not teach that the external surface layer has a substantially uniform cell density and that it has an outer portion, which free of interruption by cell. Sawada et al., in fact, say nothing about the structure other than it can be foamed.

Sawada et al. also do not teach that the core layer can comprise a foamed thermoplastic polyolefin elastomer. The core layer, which is referred to as layer 1B, is not foamed as indicated in the Office Action. The only core layer that is foamed is in the comparative examples, and these core layers do not comprise a thermoplastic polyolefin elastomer, but a urethane foam. (Column 8, lines 5-10).

Additionally, as noted in the Office Action, Sawada et al. do not teach substantially covering the rim portion and the spoke portion of a steering wheel. Moreover, there is no suggestion in Sawada et al. to use such a material to cover the rim portion and spoke portion of the steering, or that using such a material to cover a rim portion and spoke portion of a steering wheel is even desirable.

Reidy et al. also do not teach a framed thermoplastic polyolefin elastomer material that has an inner portion with a substantially uniform cell density and that has an outer portion, which is free of interruption by cell. Reidy et al. teach a padding material comprising a thermoplastic elastomer. Reidy et al. teach that the thermoplastic elastomer can be Arnitel EM 400. As discussed in the background section of the present application and in the Arnitel reference provided in the IDS, Arnitel EM 400 is not a polyolefin thermoplastic elastomer, but a polyester.

Reidy et al. also teach that thermoplastic elastomers, such as polypropylene can be used for the steering wheel. Reidy et al. however, do not teach that the durometer shore A hardness of a thermoplastic elastomer formed from polypropylene. Additionally, there is no suggestion in Reidy et al. that a thermoplastic elastomer formed from a polypropylene has a durometer Shore A hardness of about 30 to about 90. Moreover, Reidy et al. do not teach that the polypropylene is used in combination with a gasified foaming agent. Additionally, although suggested by Reidy et al., polypropylene is not a thermoplastic elastomer. Polypropylene as defined in Hawley's Condensed Chemical Dictionary is a crystalline thermoplastic polymer. It is not a thermoplastic elastomer in and of itself. Polypropylene must be combined with an additional polymer that has amorphous properties to form a thermoplastic elastomer. Therefore, even though Reidy et al. teach that polypropylene is an example of a thermoplastic elastomer, this is not an accurate statement, and thus, Reidy et al. cannot be relied on to teach that a thermoplastic polyolefin elastomer.

Reidy et al. also do not teach a padding material of a thermoplastic polyolefin elastomer with a continuous external surface free of interruption by a cell. Reidy et al., first, only disclose a thermoplastic resin has the structure disclosed in Fig. 4, with an external skin and underlying core. Reidy et al. do not teach that this thermoplastic resin is a thermoplastic polyolefin elastomer. Reidy et al. further do not teach that the padding material has an external surface free of interruption by cell. Referring to Fig. 4 of Reidy et al., which depicts a padding material on a steering wheel, the padding material includes numerous cells across the surface 20 of the padding material. Thus, the external surface of the padding material is not free of interruption by cell.

Thus, Sawada et al. in view of Reidy et al. fail to teach or suggest a thermoplastic polyolefin elastomer with a durometer Shore A hardness of about 30 to about 90 that has an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell.

2. The Office Action fails to provide a motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al.

To establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant. *In re Kotzab*, 55 USPQ2d 1313, 1315 (Fed. Cir. 2000). Office Action provides no motivation, suggestion, or teaching to cover the rim and spoke portion of a steering wheel as taught in Reidy et al. with the thermoplastic polyolefin elastomers taught in Sawada et al.

The Office Action argues that it would be obvious to one of ordinary skill in the art at the time the invention was made to modify the padding of Sawada et al. with the teachings of Reidy et al. so as to provide a cover that is adhered to the spoke and rim portions of the steering wheel to ensure strength and continuity across the steering wheel, while providing good wear characteristics along the rim of the steering wheel. There is no teaching or suggestion in Sawada et al. and Reidy et al. that a thermoplastic polyolefin elastomer, and particularly, a thermoplastic polyolefin elastomer taught in Sawada et al., when adhered to a spoke or rim portions will “ensure strength and continuity across the steering wheel, while providing good wear characteristics along the rim of the steering wheel,” as argued in the Office Action.

Sawada et al. is only concerned with selecting polymers to form a cover that has a “surface that is soft and comfortable to the touch... and that is easily broken in a controlled manner when the air bag inflates.” (Column 1, lines 66-67, column 2, lines 1-10). There is no suggestion in Sawada et al. that a thermoplastic polyolefin elastomer will have good wear characteristics when used along the rim or spoke of a steering wheel

or that a polymer that can be easily broken can be used to cover a rim and spoke portion of a steering wheel. Likewise, Reidy et al. do not teach or suggest that a thermoplastic polyolefin elastomer, such as a thermoplastic polyolefin elastomer, will have good wear characteristics when used along the rim or spoke of a steering wheel or that a polymer that can be easily broken can be used to cover a rim and spoke portion of a steering wheel. In fact, Reidy et al. states that the "prior art does not identify a single thermoplastic material that will yield the necessary physical characteristics of for both the rim portion of a steering wheel and the portion of the steering wheel that will function as an air bag cover." (Column 3, lines 41-45).

Accordingly, the Office Action's motivation to combine the teaching of Reidy et al. and Sawada et al. are at best speculation and conjecture. Speculation and conjecture, however, are not sufficient for establishing a prima facie case of obviousness. Ex Parte Yamamoto, 57 USPQ 2d 1382, 1384, (Bd. Pat. App. Int. 2000).

"It is well settled that a rejection based on 103 must rest upon a factual basis rather than conjecture, or speculation. Where the legal conclusion of obviousness is not supported by fact it cannot stand." Id.

Thus, nothing in the prior art references of record suggests the desirability of using a foamed thermoplastic polyolefin elastomer to cover a steering wheel spoke and rim portion. Therefore, the motivation for the combination of Sawada et al. and Reidy et al. relied upon in the rejection of claim 1 could only have arisen from hindsight reconstruction, which is impermissible. Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc., 30 USPQ2d 1377, 1380 (Fed. Cir. 1993).

The teachings of the prior art must be viewed without benefit of the applicants' disclosure and must in and of themselves make the invention as a whole obvious to one of ordinary skill in the art. See In re Spinnoble, 160 USPQ 237, 243 (CCPA 1969). Therefore, the patents relied upon in the rejection of claim 1 do not in and of themselves provide teachings, which would have made the features of claim 1, as a whole, obvious to one of ordinary skill in the art.

3. The combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1.

Assuming arguendo, that there was a motivation to combine the teachings of Sawada et al. and Reidy et al., the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 1. As discussed above, Sawada et al. do not teach a foamed thermoplastic polyolefin elastomer that has an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell. Thus, if one was to provide the

thermoplastic polyolefin elastomer of Sawada et al. over the rim and spoke portion of the steering wheel as taught in Reidy et al., the thermoplastic polyolefin elastomer would still not include an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell.

Claims 3, 5, and 6 depend either directly or indirectly from claim 1 and therefore should be allowable because of the aforementioned deficiencies in rejection with respect to claim 1 and because of the specific limitations recited in claims 3, 5, and 6.

Claim 7 depends from claim 1 and further recites that the foamed padding material is plasticizer-free. Claim 7 should be allowable because of the aforementioned deficiencies in rejection with respect to claim 1. Additionally, claim 7 should be allowable because Sawada et al. teach away from a plasticizer-free padding material. Sawada et al. state that a hydrocarbon based rubber softener, such as paraffin-based oil or naphthene-based oil can be used as a softener to obtain the desired softness of in the surface layers. (Column 3, lines 23-26). A rubber softener is a plasticizer. Thus, Sawada et al. teach using a plasticizer in combination with thermoplastic polyolefin elastomer, and therefore teach away from the invention recited in claim 7.

Claims 8 and 11 depend directly from claim 1 and therefore should be allowable because of the aforementioned deficiencies in the rejection with respect to claim 1 and because of the specific limitation recited in claims 8 and 11.

Claim 12 recites limitations similar to claim 1 and therefore should be allowable because (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 12.

Additionally, claim 12 recites the limitation that the thermoplastic polyolefin elastomer padding material is plasticizer-free. As discussed above with respect to claim 7, Sawada et al. in view of Reidy et al. teach away from a plasticizer-free padding material. Therefore, withdrawal of the rejection of claim 12 is respectfully requested.

Claims 14, 15, and 18 depend directly from claim 12 and therefore should be allowable because of the aforementioned deficiencies in the rejection with respect to claim 12 and because of the specific limitations recited in claims 14, 15, and 18.

Claim 19 contains limitations similar to claim 12 and therefore should be allowable because (1) Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell, (2) the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al., and (3) the combined teachings of Sawada et al. and Reidy et al. would still not teach the invention recited in claim 19.

Claims 20-24 and 27 depend either directly or indirectly from claim 19 and therefore should be allowed because of the aforementioned deficiencies in the rejection with respect to claim 19 and because of the limitations recited in claims 20-24 and 27.

Claims 28 contains similar limitations as claim 7 and therefore should be allowed for the aforementioned deficiency in the rejection with respect to claim 7 and the specific limitations recited in claims 28. Additionally, claim 28 recites the limitation that the thermoplastic polyolefin elastomer padding material is plasticizer-free. As discussed above with respect to claim 7, Sawada et al. in view of Reidy et al. teach away from a plasticizer-free padding material. Therefore, withdrawal of the rejection of claim 28 is respectfully requested.

35 U.S.C. §103(a) rejection of claims 9, 10, 16, 17, 25, and 26

Claims 9, 10, 16, 17, and 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Sawada et al. in view of Reidy et al. and Braun et al. (WO 99/10419). The Office Action argues that Sawada et al. in view of Reidy et al. disclose the claimed invention except for the encapsulation of the foaming agent and Braun et al. disclose that it is known in the art to provide an impregnated polyolefin granule containing a foaming agent.

Claim 9 depends from claim 1 and further recites that the chemical foaming agent prior to being gasified is in the form of a plurality of granules that are encapsulated with a resin carrier.

As discussed above with respect to claim 1, Sawada et al. in view of Reidy et al. do not teach or suggest a foamed thermoplastic polyolefin elastomer padding material that has a durometer shore A hardness of about 30 to about 90 and comprises an inner portion having a cellular structure and a substantially uniform cell density and an outer portion having a continuous external surface free of interruption by a cell. Additionally, the Office Action provides no motivation to use the thermoplastic polyolefin elastomers in Sawada et al. for the padding material in Reidy et al. and the combined teachings of

Sawada et al. and Reidy et al. do not teach the invention recited in claim 1. Moreover, Braun et al. do not disclose or suggest a foamed thermoplastic polyolefin elastomer padding material that substantially covers a rim and spoke portion of a steering wheel. Therefore, claim 9 is patentable over Sawada et al. in view of Reidy et al. and Braun et al.

Claim 10 depends from claim 9 and recites the resin carrier is essentially the same material as the thermoplastic polyolefin elastomer. Claim 10 is allowable because of the aforementioned deficiencies in the rejection with respect to claim 9. Claim 10 is also allowable because Reidy et al. teaches away from using a resin carrier that is a thermoplastic polyolefin elastomer. Reidy et al. states that to improve adhesion of the thermoplastic elastomer a foaming agent with a non-olefinic carrier should be used. (Column 9, lines 41-44). Reidy et al. teaches away from using a resin carrier that is essentially the same as a thermoplastic polyolefin elastomer.

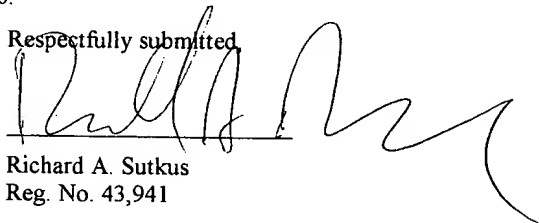
Claims 16 and 17 depend indirectly from claim 12 and recite similar limitations as claims 9 and 10. Claim 16 and 17 should therefore be allowable because of the aforementioned deficiencies in the rejection with respect to claim 12 and because of the specific limitations recited in claims 16 and 17.

Claims 25 and 26 depend indirectly from claim 19 and recite similar limitations as claims 9 and 10. Claim 25 and 26 should therefore be allowable because of the aforementioned deficiencies in the rejection with respect to claim 19 and because of the specific limitations recited in claims 25 and 26.

In view of the foregoing, it is respectfully submitted that the above-identified application is in condition for allowance, and allowance of the above-identified application is respectfully requested.

Please charge any deficiency or credit any overpayment in the fees for this amendment to Deposit Account No. 20-0090.

Respectfully submitted,


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